

UNDERGRADUATE THESIS REPORT

Understanding and Exploring Neuromarketing Using Social Media

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Executive Summary

“Can businesses use neuromarketing to connect the benefits that each client seeks in social media to their company goals?”

Social media has become an essential tool for business communication, enabling companies to connect with customers through platforms like Facebook, YouTube, WhatsApp, Instagram, and TikTok. In Pakistan, with a population of 227.3 million, there were 82.9 million active internet users and 71.7 million social media users. Facebook had 43.55 million users, YouTube had 71.7 million, and Instagram had 13.75 million. However, only 20 out of the Fortune 500 companies actively engage with consumers on Facebook. Nevertheless, 90% of these companies have a presence on Facebook; while 92% have accounts on LinkedIn, making it the most popular platform for businesses. The research focuses on exploring neuromarketing in social media in Pakistan, examining the perspectives of businesses and social media users. It aims to connect customer benefits with company goals. The study consists of two separate studies, analyzing the organization's viewpoint and the user's perspective. Objectives include understanding social media usage, assessing understanding of neuromarketing, and exploring potential uses. In-depth interviews with organizations and users are conducted, using purposive sampling. Thematic content analysis and NVIVO software aid data analysis. Qualitative interviews shed light on neuromarketing in social media, revealing platform usage, familiarity levels, and limited adoption of techniques like eye tracking and face coding. Voice recognition and EEG had low application and perceived usefulness. Integrating neuromarketing highlighted communication's importance for aligning goals with customer benefits, emphasizing the need for improved understanding and implementation for better marketing outcomes. Neuromarketing uncovers genuine reactions, going beyond surface-level data and socially acceptable responses, making the effort worthwhile. Collaboration with consumers in data collection is crucial, requiring a communication strategy that highlights the benefits they stand to gain. Integrating neuromarketing in social media follows the purpose/benefit model. While challenges exist, viewing them as a necessary stage helps build lasting connections with customers.

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Chapter 1: Introduction

1.1. Chapter Overview

The use of social media has fundamentally altered how businesses handle marketing in recent years. Social media has ingrained itself into people's everyday lives, and businesses have tried to take advantage of this to better understand their customers and enhance their marketing tactics. The study of customer responses to various stimuli, including social media content and various campaigns, has made use of the powerful tool known as neuromarketing, which combines neuroscience and marketing research.

The potential advantages of utilizing neuromarketing to comprehend customer behavior on social media platforms have been acknowledged by numerous international platforms. For instance, Forbes has emphasized the potential of neuromarketing in the context of social media advertising, highlighting its capacity to assist businesses in producing advertisements that are more compelling to their target audiences. Like this, articles from the Harvard Business Review have been published addressing how neuromarketing can be used to examine how consumers react to social media content and guide the development of more successful social media marketing strategies. The World Economic Forum has also highlighted the potential for neuromarketing to increase the efficacy and efficiency of marketing campaigns and acknowledged the significance of neuromarketing in the framework of digital marketing, including social media. Global platforms appear to understand the possibilities of neuromarketing to enhance marketing strategies on social media platforms.

Therefore, to contribute to the discussion of neuromarketing, a field that has not yet been thoroughly explored and utilized in theory and practice, this study aims to provide a better understanding of consumer behavior on social media platforms that will influence more successful marketing strategies through examining the relationship between neuromarketing and social media.

1.2. Preamble/Background

1.2.1. Social Media as a medium of communication and potential

Social media is a comparatively new and difficult field. When it involves communicating with and considering the importance and prevalence of consumers, the market shapes or forces

businesses' approaches. Yet, after so many discussions on this topic, there is not a single evident model for the companies to adopt in this new landscape of communication. This is due to the ever rapid and continuously changing trends, behaviors and attitude of users that are generating content forcing businesses to observe social media as a crucial component of business communication.

Social media is being described by many of the authors, researchers, writers, and thinkers but among the best described is as “a group of internet-based applications that are built on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User-Generated Content (UGC).” (Andreas M. Kaplan, 2010) Another notable description of social media is “as disruptive information technology (IT) innovations that have the capabilities of transforming the way we are currently doing business.” (Samuel Fosso Wamba, 2014)

Above citations and several discussions on this subject have proven evidently that social media has utmost potential that has been done to some extent so far, transforming communication. Social media has established itself as a focal point for gatherings of families and friends in today's more interconnected than ever before global environment. Thus, creating a medium and space for companies to connect with their customers more easily and engagingly. Social media comes in various, tech-enabled forms such as, photo sharing, social networks, social gaming, blogging, business networks, video sharing, visual worlds, chat-messaging, reviews, and much more, everything lying under user generated content (UGC). (Dollarhide, 2021) The most popular social media sites are: (Walsh, 2022)

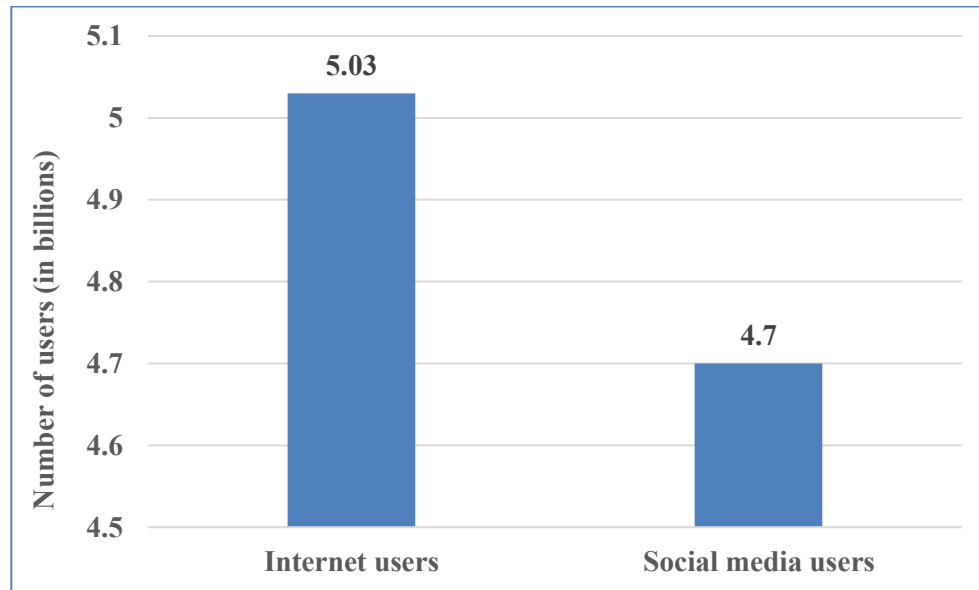
- | | |
|----------------|-----------------|
| i. Facebook. | vi. Snap chat. |
| ii. YouTube. | vii. Pinterest. |
| iii. WhatsApp. | viii. Reddit. |
| iv. Instagram. | ix. LinkedIn. |
| v. TikTok. | x. Twitter. |

1.2.2. Global Usage of Internet & social media

Globalization, in its essence, is unfulfilled without the help of the internet and social media to be precise. Its enormous penetration rate and huge number of users worldwide, has opened the gates for utmost opportunities for the businesses and has forced companies to put social media tools

clearly and carefully being one of the most valuables by incorporating it into the communication strategy of many businesses today, for the firms' marketing and communication strategies.

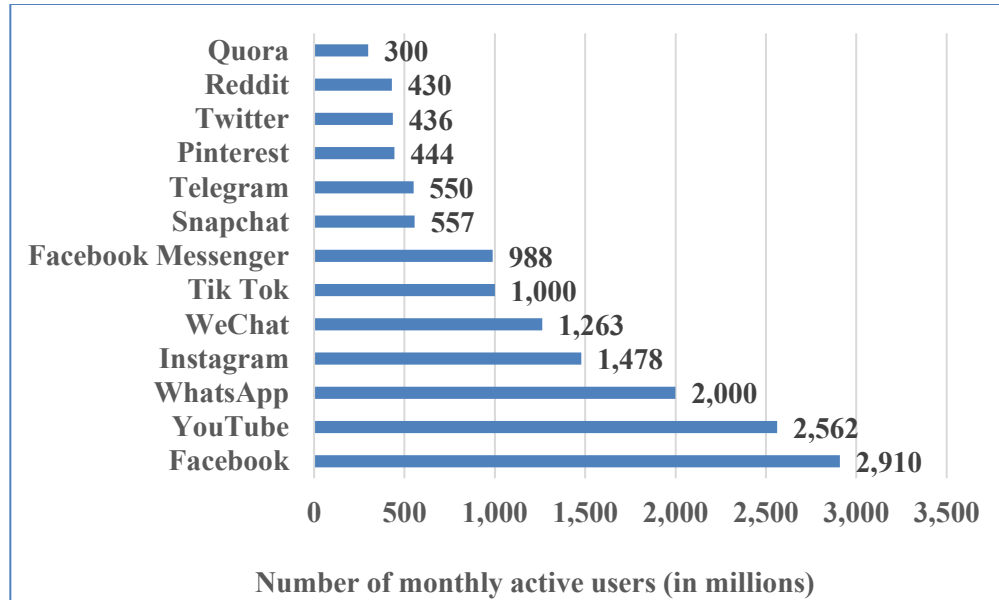
As of July 2022, there were 5.03 billion active internet users and 4.7 billion active social media users globally, according to Statista's Global Digital Population report. (Department, 2022)



Graph 1: Number of internet & social media users worldwide as of July 2022.

Source: (Department, 2022)

Moreover, worldwide social networking penetration rate is 58.4% with China being the largest social media market. Among various social media sites, As of January 2022, Facebook had 2,910 million users globally, followed by several other well-known platforms like YouTube with 2,562 million, WhatsApp with 2,000 million, Instagram with 1,478 million, and TikTok with 1,000 million. (Dixon, 2022)



Graph 2: Most popular social networks worldwide as of January 2022.

Source: (Dixon, 2022)

71% of the users make use of Facebook to message friends and family, while 69.7% Instagram and 42.3% Snap chat users make use of the platform to post or share photos or videos. LinkedIn and Twitter are being used to keep updated by 29.2% and 61.2% users, respectively. Whereas Pinterest is used for brand search and followed by 38.6% users. Funny or entertaining content is the reason for 37.2% Reddit and 78.2% TikTok users to use the platforms. (Kepios, 2022)

Table 1: Percentage of active users of each social media platform aged 16 to 46 as of October 2022.

SOCIAL MEDIA ACTIVITIES BY PLATFORM					
SOCIAL MEDIA PLATFORM	LOOK FOR FUNNY & ENTERTAINING CONTENT	FOLLOW OR RESEARCH BRANDS & PRODUCTS	KEEP UP TO DATE WITH NEWS & CURRENT EVENTS	MESSAGE FRIENDS & FAMILY	POST OR SHARE PHOTOS OR VIDEOS
FACEBOOK	54.4%	54.9%	59.2%	71.0%	64.1%
INSTAGRAM	60.9%	62.3%	50.7%	50.8%	69.7%
LINKEDIN	13.8%	26.9%	29.2%	14.6%	17.7%
PINTEREST	23.6%	38.6%	16.4%	8.9%	16.8%
REDDIT	37.2%	30.7%	34.0%	13.0%	18.4%
SNAPCHAT	36.8%	23.2%	21.9%	35.8%	42.3%
TIKTOK	78.2%	35.1%	32.4%	17.0%	36.5%
TWITTER	36.0%	38.0%	61.2%	23.0%	31.1%

Source: (Kepios, 2022)

Taking into consideration the age segments and gender specification, WhatsApp is being used most by the age bracket of 55 – 64 both by males and females, Facebook is being used most by the people in between 55 – 64 by both the genders. Instagram has been in the eyeline of the young males and females mostly, having an age bracket of 16 – 24. (Kepios, 2022)

Table 2: Percentage of favorite social media platforms amongst female internet users as of October 2022.

FAVORITE SOCIAL MEDIA PLATFORMS AMONGST FEMALE INTERNET USERS					
SOCIAL MEDIA PLATFORMS	AGE 16 – 24	AGE 25 – 34	AGE 35 – 44	AGE 45 – 54	AGE 55 – 64
WHATSAPP	13.1%	14.0%	15.4%	17.2%	20.5%
FACEBOOK	7.2%	14.1%	15.7%	16.4%	19.0%
INSTAGRAM	23.2%	17.4%	12.8%	10.4%	7.6%
WECHAT	9.4%	12.7%	15.4%	13.5%	11.0%
TIKTOK	11.3%	6.1%	5.0%	4.1%	2.8%
TWITTER	4.7%	2.7%	2.1%	2.2%	2.2%
TELEGRAM	1.8%	1.7%	1.4%	1.5%	1.4%

Source: (Kepios, 2022)

Table 3: Percentage of favorite social media platforms amongst female internet users as of October 2022.

FAVORITE SOCIAL MEDIA PLATFORMS AMONGST MALE INTERNET USERS					
SOCIAL MEDIA PLATFORMS	AGE 16 – 24	AGE 25 – 34	AGE 35 – 44	AGE 45 – 54	AGE 55 – 64
WHATSAPP	15.5%	15.2%	17.0%	19.1%	21.7%
FACEBOOK	10.7%	16.3%	17.7%	17.8%	18.2%
INSTAGRAM	22.1%	14.5%	9.6%	6.7%	4.7%
WECHAT	9.1%	12.4%	15.1%	13.7%	13.1%
TIKTOK	6.6%	4.7%	4.1%	3.7%	2.5%
TWITTER	4.5%	4.3%	3.7%	4.2%	2.9%
TELEGRAM	3.0%	2.8%	2.6%	2.1%	1.7%

Source: (Kepios, 2022)

1.2.3. Social Media usage in Pakistan

Pakistan’s population stands at 227.3 million in January 2022 with an increase of 1.9% from last year. Female representation of that population is 48.5% and the rest are male. The population is divided into 37.8% in urban areas and 62.2% in rural areas. Pakistan has 39% youngsters in its population from an age bracket of 13 – 34, according to Digital 2022: Pakistan report, done by “We Are Social” and “Kepios”. (Kemp, 2022)

According to the analysis of Kepios and Simon Kemp’s report, there were 82.90 million active users of the internet in Pakistan in January 2022 with a penetration rate at 36.5% of the total population. This figure also reveals a shocking fact that 63.5% of the population didn’t have access to the internet and remained offline in this more than ever globally connected world, despite there was an increase by 35.9% in the internet users at the start of 2022 as compared to last year. (Kemp, 2022)

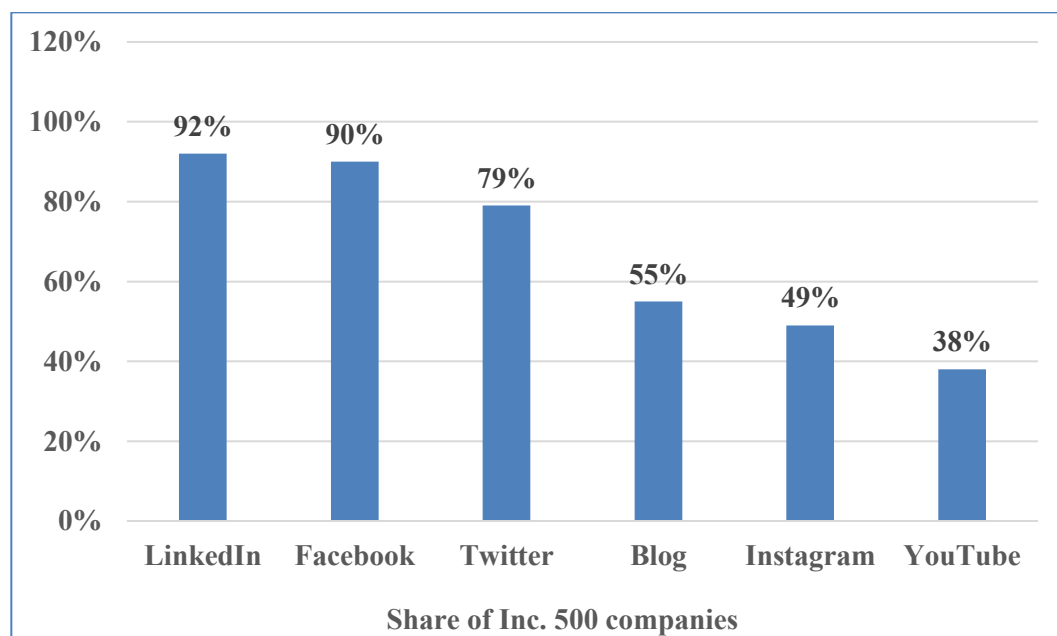
As for the social media usage, there were 71.70 million social media users in Pakistan as of January 2022 that is equivalent to 31.5% of population. Taking into consideration the most prominent social media sites, According to Data published in Meta’s advertising resources reported by Kepios, Pakistan had 43.55 million active Facebook users with 19.2% platform reach in terms of advertising from total population making it equivalent to 52.5% of the local internet user base. 19.1% of those were females and the rest of them were male. (Kemp, 2022)

Surprisingly, YouTube had 100% social media users available on the platform i.e., 71.70 million users, as per data published by Google’s advertising resources reported by Kepios. The

advertisement reach from this platform was equivalent to 31.5% of Pakistan’s total population and 86.5% of Pakistan’s total internet user base out of which 28% audience was female and 72% were male. On the contrary, Instagram had 13.75 million users in Pakistan. The ad reach through this platform was 6% of the total population and 16.6% of the local internet user base. 34.8% of which was female and 65.2% was male. TikTok had 18.26 million users with ads reach of 13.5% and 22% of the total adults of the population and local internet base, respectively. 17.8% of which was female and 82.2% was male. LinkedIn had 7.60 million users in Pakistan with ads reach of 3.3% of the total population that is equivalent to 9.2% of the local internet user base. As per the gender specification, 24.2% of those were female and 75.8% were male. Moreover, Twitter with 3.4 million users in Pakistan had 1.5% ad reach of the total population through the platform making it equivalent to 4.1% of the local internet user base. (Kemp, 2022)

1.2.4. Companies’ usage pattern and perception of social media.

Evidently being displayed above, social media has now become the most important yet influential medium for the masses to communicate, connect, build networks, and share experiences with others. On the contrary, when it comes to how businesses make use of social media, only 20 out of the Fortune 500 businesses interact with consumers on Facebook, as reported by Kit Smith in 2019. (Smith, 2019) While, on the other hand, 90% of those companies have presence on Facebook, 92% have accounts on LinkedIn, making it the most used social media platform by the businesses among all. Whereas Twitter stands at third, with 79%, as per Statista’s report. (Clement, 2019)



Graph 3: Most popular social networks used by Inc. 500 companies in 2017.

Source: (Clement, 2019)

1.3. Area under Investigation

The growing usage of social media in the masses has made companies think to develop a sustainable model in these settings for social media corporate communication keeping in mind the perspective in the long run and market reality. According to Kit Smith, the approx. expenditure on social media and network advertising was 90 billion dollars in 2019. Additionally, 38% of the companies aim to spend more than 20% of their overall advertising expenditures on social media platforms. (Smith, 2019) With these enormous spent amounts, one must be sure of how messages really get across to the customer and what the receiver really wants. Testing and evaluating the message that must be delivered becomes a major part for the companies to be taken care of. Above all, shaping the right and constantly evolving corporate communication strategy that conveys an effective message to the appropriate target group and is constantly evolving is of utmost importance. To accomplish this goal, companies must have accurate and real data of customers that in turn prove to be fruitful for the company's sustainability in the long run. In this context, neuromarketing research techniques have proven to be far more accurate and real as compared to the traditional market research techniques. With the help of these newly emerged neuromarketing techniques, this study will take into consideration the two key components: Using social media for business communications, its real impact and what benefits do customers perceive from it. Under the main research question: *"Can businesses use neuromarketing to connect the benefits that each client seeks in social media to their company goals?"* We seek to reveal the hidden facets. With this question, our aim is to take a step further to unveil the ways neuromarketing can be used in social media networks to achieve sustainable business growth.

1.4. Research Objectives

This study is set out to accomplish the following goals with our study using the following question:

- A. To compare and contrast the application of social media to business and for personal reasons.
- B. To comprehend how well-versed is the idea of neuromarketing among people and the business setting.
- C. The purpose for which these neuromarketing applications can be used and the benefits that can be derived through it in the social media channels.

1.5. Research Questions

- A. Is there any relation between using social media for personal and professional reasons?
- B. How aware is the business world and individuals with the idea of neuromarketing?
- C. What is the attitude towards using these neuromarketing tools and the benefits that can be derived through it in the social media channels?

1.6. Significance

The core of neuromarketing is the use of neuroscientific tools to analyze and comprehend human behavior in connection to markets and marketing exchanges. This has two important implications: first, it budes concern of neuromarketing aside from merely the implementation of neuroimaging by businesses for their gain; second, it widens the span of neuromarketing research from entirely consumer behavior to involve many more possibilities of concern, like as cross organizational study that is prevalent in writing the marketing research.

Neuroscientific methodologies are anticipated to make a significant contribution to knowledge of marketing-relevant human behavior. For at least two decades, the benefits of physiological assessment in marketing have been recognized. The respondent's capacity and readiness to correctly reflect their opinions and/or past behaviors are completely dependent upon the self-assessment techniques frequently used in marketing research. Physiological opinions, on the other hand, can be acquired when individuals are proactively engaged in the behavior, are challenging for individuals to control with little influence, and, while there are individual differences in physiological opinions, distinctions in social contexts and stimuli have also been shown to have a powerful effect across individuals.

Despite the substantial disparity between what consumers believe and what they say they believe; suppliers may be able to design a more successful marketing plan based on insights into why and how customers make purchase decisions.

1.7. Scope

This study will take the Pakistani market into account. Studies demonstrate that the outcomes of neuromarketing research can be used to gauge the success of marketing communications .Taking in considerations, the requirement to develop a business strategy that offers customers experiences rather than just revenue for the business and a return on investment for owners, the main and direct beneficiaries of this report will be the marketers from different industries that if guided properly, be able to set up a long-term sustainable business communication model(s). Along with them, local

people will also be able to benefit from the study as this will help them to better understand and respond to different communication attempts from various companies.

1.8. Limitations

Most companies cannot afford the expensive, specialized staff and technology required for neuromarketing. Unfortunately, most of these centers' output is commercially sensitive, so little is known about what they achieve, despite the fact that newspapers and other sources find these concepts intriguing.

In addition to the advantages of discovering hidden data, accessing people's unconscious thought processes and brains also poses several ethical issues. Ethical issues are, in fact, the most delicate issue in integrating neuroscience techniques to marketing research. Consequently, the requirement of Consent, discretion, and privacy, and subject vulnerability is a basis for neuromarketing acceptability and result validity when designing neuromarketing study methodologies. The main issues with neuromarketing, according to Hensel et al., are customer fabrication, openness issues, and deficiencies in customer independence. Using neuromarketing presents another difficulty: the results of research tasks that demand a thorough understanding of neuromarketing to provide reliable and valid conclusions and suggestions for the subsequent steps.

1.9. Justification

Given its advantages and restrictions, neuromarketing is a potential strategy for attaining long-term success. This is shown by neuromarketing's capacity to provide the broader setting of better utilization of resources along with using goods and companies that have a higher chance of being accepted by the market. Personalized marketing that uses cues that are particular to each client may also be made possible by neuromarketing. Finally, the main objective of neuromarketing is to discover methods to lessen resource waste by better satisfying customer needs and wants. The goal of the current research is to determine how social networks can be used to combine business and consumer views through neuromarketing.

1.10. Relation with SDGs

SDG No. 9 focuses on fostering sustainable development through industry, innovation, and infrastructure. Neuromarketing research can act as a catalyst in this process by empowering businesses to elevate their branding, advertising, and long-term communication practices. By

tapping into the insights derived from neuroscience, businesses can drive higher levels of consumer satisfaction and loyalty.

Neuromarketing research delves deep into understanding consumer behavior, preferences, and decision-making through the examination of brain responses and physiological reactions. By harnessing this knowledge, businesses can cultivate strategies that promote sustainable industry and innovation. They can optimize their branding initiatives, devise groundbreaking products, and create resilient and inclusive infrastructure that aligns harmoniously with consumer demands.

Through the utilization of neuromarketing, businesses can make well-informed choices concerning resource allocation, invest in sustainable technologies, and construct infrastructure that champions environmental and social responsibility. Furthermore, by tailoring their communication efforts based on neuroscientific insights, businesses can effectively convey their sustainability endeavors, captivate consumers, and foster unwavering loyalty.

To summarize, by incorporating neuromarketing research into their operations, businesses can contribute to the realization of SDG No. 9 by propelling sustainable industry, innovation, and infrastructure. By gaining a profound understanding of consumer preferences and deploying effective communication strategies, businesses can strengthen their commitment to sustainability, promote responsible practices, and meet the ever-evolving needs of consumers and the global community.

Chapter 2: Literature Review

2.1. Neuromarketing – A new concept

2.1.1. Historical background

Neuromarketing in its simplistic essence is a multidisciplinary study of business and science. Those who have studied and worked in the diverse field of neuromarketing understand that it is fascinating since it largely draws from neuroscience and marketing, but it also shows signs of being influenced by cognitive neuroscience, neuroanatomy, and neurology. (Chi, 2022)

It initially developed as a subfield of neuroeconomics, therefore it is seen as a field situated between neurosciences and economics with the aim of explaining decision-making through the creation of neurological models and systems. (Cenizo, 2022) Many of us have been baffled by the distinction between neuromarketing and neuroeconomics even though the two have frequently been used interchangeably. Neuromarketing was identified as a branch of neuroeconomics in a time story titled "Brain Sells." Even while some ardent neuro-marketers might think it's a whole distinct field of its own, this idea isn't too far-fetched given that neuroeconomics is the general study of how the brain influences decision-making. (Chi, 2022)

2.1.2. Origin of neuromarketing

Although neuromarketing is a relatively young subject, the desire to examine humans' minds has been around for a very long time. Since the time of the ancient Egyptians, there has been evident scientific studies related to the brain, as can be seen if we go back as far tracking the discipline of neuroscience. One of the first people to publicly declare a strong interest in this field was Hug Munsterberg, father of organizational psychology, recorded as far back as 1913. (Chi, 2022)

Ale Smidts, a Dutch marketing professor is credited with coining the phrase "neuromarketing" through his article "Kijken in het brein" that after translating into English, adopted its title to "looking into neuromarketing" in 2002, thus officially introducing the term "neuromarketing" for the industry. However, even though Smidts is acknowledged for inventing the term, the discipline's roots begin in the 1990s. Professor Gerald Zaltman, US Marketing professor, was one of the pioneers in this field, having applied for a patent four years before the word "neuromarketing" had even been developed. (Cenizo, 2022) The Zaltman metaphor elicitation technique (ZMET), a research instrument for marketing that entailed examining people's conscious and unconscious thoughts, was the subject of this patent. (Chi, 2022)

It's evident that neuromarketing is an interdisciplinary field that blends aspects of neurology and psychology with theories of consumer behavior to shed light on the factors that ultimately influence a consumer's choice of a product to buy. (Cenizo, 2022)

2.1.3. The first neuromarketing experiment

In 2003, Read Montague, a professor of neuroscience at Baylor College of Medicine, conducted what is thought to be one of the earliest known neuromarketing tests. The investigation was a follow-up to a 1975 challenge trial in which subjects tasted Pepsi and Coca-Cola in blind fashion. (Chi, 2022)

Even though Pepsi won the contest, Coca-Cola consistently outperformed its rival in sales, even though Pepsi had won the contest. Montague conducted the experiment again out of curiosity, but this time he connected participants to an fMRI scan to monitor brain activity. Depending on whether the subjects were aware of the brand they were ingesting or not, the research was able to demonstrate that various brain regions lit up. (Doorn & Miloyan, 2018)

Fascinating findings indicated that Coca-Cola stimulated medial prefrontal cortex action, a region of the brain linked to higher cognition and short-term memory. Respondents reportedly said they preferred Coke over Pepsi when they were aware that they were drinking Coke, but when they weren't, they said they preferred Pepsi. In this case, the ventral putamen, which is connected to decision-making and reward sensing, flared up in this instance. (Chi, 2022)

The above-mentioned experiment links its underlying foundation to the triune brain concept, commonly known as “three brain theories” introduced by American neuroscientist Paul MacLean in the 1960s. (Baars & Gage, 2010) The triune brain theory falls short in adequately describing how the brain works in daily life or when responding to stress, according to contemporary neuroscience research. In particular, the limbic system is not just a repository for emotions, and the brain does not contain purely emotional circuits, and the cortex is not just a hub for thinking, and the brain does not contain purely cognitive circuits. Rather, Emotion and thought are related processes. And interact with one another. (Steffen, Hedges, & Matheson, 2022)

2.1.4. The Tools of Neuromarketing

The measurement of physiological and neural signals to learn about consumer motivations, preferences, and choices is referred to as "neuromarketing". After that, this knowledge can be applied to creative advertising, product development, pricing, and other marketing-related areas.

The two most widely used methods of measurement are physiological tracking and brain scanning, which follow eye movement and other proxies for neural activity. (Harrell, 2019) The following are additional neuroscientific techniques used in neuromarketing: (Lim, 2018)

1. Electromagnetic.
 - i. Electroencephalography (EEG)
 - ii. Magneto encephalography (MEG)
 - iii. Steady-state topography (SST)
2. Metabolic.
 - i. Functional magnetic resonance imaging (fMRI)
 - ii. Positron emission tomography (PET)
3. Electrocardiography (ECG).
4. Eye-tracking (ET).
5. Facial electromyography (fEMG).
6. Skin conductance (SC).
7. Transcranial magnetic stimulation (TMS).
8. Neurotransmitter (NT).

2.2. Neuromarketing and social media

2.2.1. Social media from neuromarketing approach; discussion from published articles

From the discussions above, it is evident that neuromarketing expands the range of marketing research far beyond the classical qualitative and quantitative techniques by providing more objective information, analysis and understanding of subjects that are based on the unconscious reaction to stimuli rather than just being written or spoken. Moreover, it establishes a setting in which studies can carefully examine how consumers make decisions in relation to identifying the underlying tendencies in attention, attitudes, emotions, and memories. (Gountas, Gountas, Ciorciari, & Sharma, 2019)

Eye-tracking, EEG, and GSR for cognitive, developmental, experimental, and media applications in psychology and neurology are presently used and made the most of in the areas of education and research (Gountas, Gountas, Ciorciari, & Sharma, 2019) but due to the inability to use these tools is what prevents people from considering them as possible avenues for examining human behavior in the field of business. (Lee, Broderick, & Chamberlain, 2007) However, Understanding the advantages of such tools allows companies to gain access to more precise and detailed information,

allowing them to develop strategies and gain edge over rivals, which can lead to better positioning in the market and more sustainable growth. (Burgos-Campero & Vargas-Hernández, 2013) For instance, social neuromarketing can open the door for the identification of important message components that activate the appropriate brain regions, which may ultimately result in the creation of more powerful advertisements. (Gountas, Gountas, Ciorciari, & Sharma, 2019)

Given that the use of online mediums has changed how study is conducted and shifted the core to novel techniques in development; the neuromarketing approach is now much more intriguing to investigate within the context of social media communication. (Guixeres, et al., 2017) Knowing how businesses can profit from the information provided by such tools is crucial for the long-term growth of the communication strategy. (Boksem & Smidts, 2015) (Leighton & Dalvit, 2011) Therefore, the business environment can and needs to take benefit from these tools' knowledge.

Companies can gain knowledge about how their messages are perceived by consumers from neuromarketing research done on social media in terms of emotional engagement, memory retention, purchase intention, novelty, awareness, and attentiveness. (Sebastian, 2014) Several studies have been found in support of the above statement. When customers engage with their preferred engagements with their favorite companies, the brain regions in charge of analytical processes are switched off in favor of those in charge of fusing emotions into purchasing decisions. (Hubert, 2010) Studies using fMRI screening have shown that men and women engage differently with information obtained through social network relationships (Hsu, 2017) the segmentation strategies more enduring and the communication strategies more individualized when engaging with the data supplied through social network relationships. (Li, Coduto, & Morr, 2019) According to research (Muñoz-Leiva, Hernández-Méndez, & Gómez-Carmona, 2019), Facebook advertising is more successful since respondents saw the banner more quickly and for an extended amount of duration than they did on other websites, despite the location being similar.

2.2.2. Contribution to the field of study

As seen in the various critically examined research articles, the discipline of neuromarketing is expanding quickly. (Lee, Chamberlain, & Brandes, Welcome to the jungle! neuromarketing literature through the eyes of a newcomer, 2018) the field of neuromarketing offers advantages not just to businesses as well as to government agencies and users of social media. (Gountas, Gountas, Ciorciari, & Sharma, 2019). It is also anticipated that the field will advance further to new levels within consumers' interests. (Brouwer, Zander, Erp, Korteling, & Adelbert, 2015)

Studies demonstrate that the outcomes of neuromarketing research can be used to gauge the success of marketing communications (Guixeras, et al., 2017) therefore, accelerating sustainable, long-term development of businesses' marketing communications. This report seeks to move science one step closer to understanding the ways we can use neuromarketing research in social media as we work to achieve sustainable business growth by considering these two key factors: using social media for business communications and to determine the true effect of social media communication, neuromarketing research is being developed.

Taking in considerations, the advent of the necessity to create a business strategy that provides consumers with interactions, not just revenue for the business and owners return on capital, given that present businesses concentrate on developing warm and friendly relationships with their clients in order to avoid having only business-related interactions, the main and direct beneficiaries of this report will be the marketers from different industries that if guided properly, be able to set up a long-term sustainable business communication models(s). Along with them, local people will also be able to benefit from the study as this will help them to better understand and respond to different communication attempts from various companies resulting in a sustainable and long-term business growth with mutual consensus. Furthermore, a thorough search of the literature failed to turn up any publications that attempted to use neuromarketing research in a social media setting, demonstrating the novelty, necessity, and need for the present article.

2.3. Variables to be analyzed.

Since the following research is based on descriptive factors to be studied; it consists of no dependent and independent variables. Rather, there are variables that will be analyzed and measured in the context of the current state, hence, no cause and effects. To advance the goal/benefit study for using neuromarketing in social media from both angles (organizations and customers), three variables seemed to be directly connecting and fulfilling the ultimate aim of the study that is: *“Can businesses use neuromarketing to connect the benefits that each client seeks in social media to their company goals?”* The variables are discussed briefly below, describing how these variables can be measured.

2.3.1. Familiarity with neuromarketing

As discussed above, neuromarketing is an area of research that combines marketing and neuroscience. It involves various neuroscience techniques to measure and analyze brain activity in response to marketing messages. Moreover, Understanding the fundamental concepts of

neuroscience and how they might be used in marketing research is necessary to get familiar with neuromarketing. Understanding how to employ various neuroscience tools and techniques to evaluate and analyze consumer response is also necessary, as is knowledge of marketing principles and strategies. Therefore, for marketers, advertisers, and market researchers who wish to design more effective marketing techniques, having a basic understanding of neuromarketing is crucial. Businesses can enhance their branding, advertising, and most importantly long-term sustainable communication activities by utilizing the insights supplied by neuromarketing research, which will ultimately result in higher consumer satisfaction and loyalty.

To drive any conclusion and proceed with the research further, the need to analyze the familiarity of the concept with the subjects (organizations and customers) becomes evident. Since, we are aiming to compare and contrast attitudes towards neuromarketing and perception of social media – both from organizational and customer perspectives, but prior to that we must have to understand the degree to which the target audience of the research is familiar with the concept of neuromarketing.

2.3.2. Perception of social media

Perception is the method of exposure and attention to marketing stimuli which concludes with the step of interpretation. (Mothersbaugh, Hawkins, & Kleiser, 2020) From the light of the previous definition, perception of social media refers to how people and organizations perceive, comprehend, and assess social media platforms and their influence on them. As per the nature of perception, there is a useful information – based perception model (Mothersbaugh, Hawkins, & Kleiser, 2020) having three major steps contributing to the formation of perception. Those three steps are:

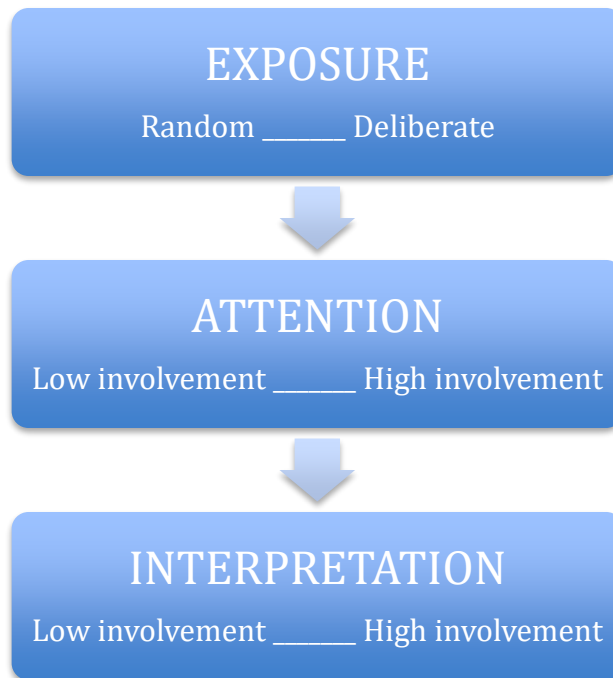


Figure 1: **Information based perception model.**
Source: (Mothersbaugh, Hawkins, & Kleiser, 2020)

When a stimulus enters the visual field of a person's sensory receptor nerves, exposure occurs. It can either be a deliberate move or just a random occurrence. When the stimulus is "seen," attention is triggered. The process of giving meaning to newly experienced stimuli is called interpretation. Both the attention and the interpretation can be of high and low involvement from the subject. Conclusively, for an object to get a perception by a subject, it has to go through the following steps, mentioned above. (Mothersbaugh, Hawkins, & Kleiser, 2020)

In the context of our research objectives, a multitude of factors, such as personal experiences, cultural beliefs, exposure to media coverage, and participation in public discourse, can affect how people and organizations view social media. Therefore, understanding these perceptions is important for long-term sustainable communication and business growth from both perspectives.

2.3.3. Attitude towards acceptance of neuromarketing

An individual's thoughts, beliefs, and feelings towards the use of neuroscientific methods in marketing study are referred to as their attitude towards acceptance of neuromarketing. It entails determining how ready people and organizations are to accept and support the employment of these tactics for sustainable and long-term business growth.

To predict behavior and provide a theoretical justification for the effective application of technology, the technology acceptance model (TAM) illuminates the mechanisms underlying technology acceptance. i.e., in this context, neuromarketing. (Marikyan & Papagiannidis, 2022). It has been one of the most important models of technology acceptance, with perceived usefulness and ease of use as the two main elements influencing a person's intention to utilize new technology, developed by Fred Davis in 1986. (Charness & Boot, 2016) TAM asserts that technology acceptance is a three-stage process and that the more user-friendly an application is, the more useful an application is to the individual, the more likely it is that an individual will find the application useful, which will likely promote wider adoption of the technology. (Marikyan & Papagiannidis, 2022)

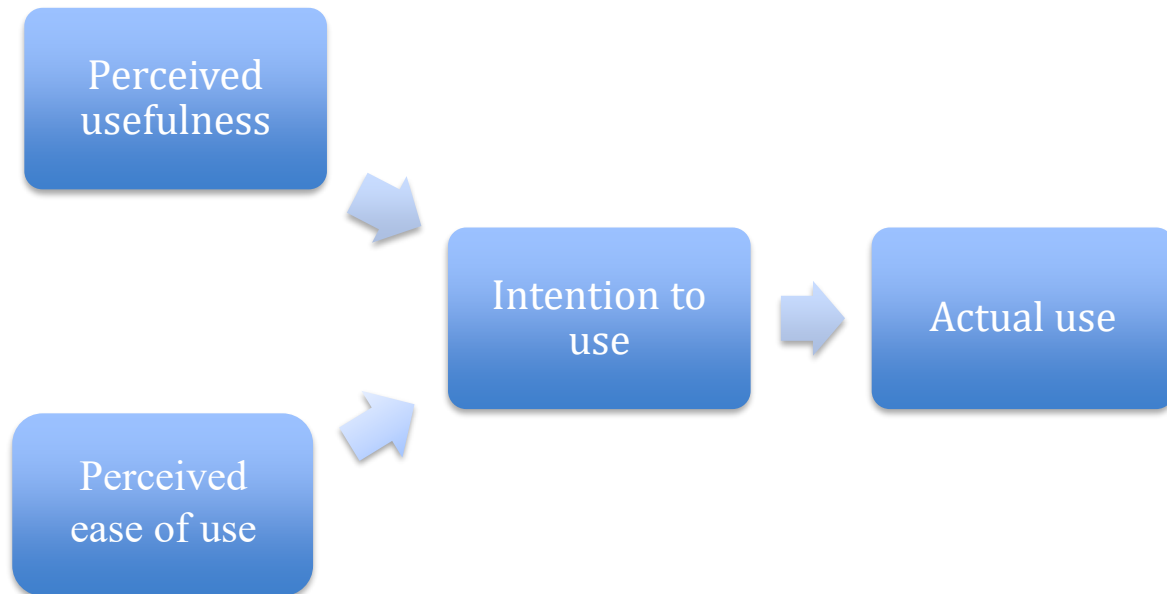


Figure 2: Technology Acceptance Model
Source: (Marikyan & Papagiannidis, 2022)

It's crucial to comprehend what people and organizations' attitude towards neuromarketing in general. Understanding public opinion on neuromarketing in general is important for businesses for their long-term sustainable business growth. It is also important to take both perspectives i.e., customers and companies, into consideration so that more effective and responsible neuromarketing strategies can be made, while also addressing potential ethical and privacy issues.

Chapter 3: Research methodology

3.1. Approach to conduct research

We observe the advent of the necessity to create a business strategy that provides consumers with interactions, not just revenue for the business and owners return on capital, given that present businesses concentrate on developing warm and friendly relationships with their clients to avoid having only business-related interactions. Consumers desire to be handled as individuals, not numerals, so businesses should utilize extensive data and all insights accessible in a sustainable way that satisfies their own objectives without jeopardizing the welfare of others. This observation led us to our main research question: “*Can businesses use neuromarketing to connect the benefits that each client seeks in social media to their company goals?*” Which in turn developed the concept of a twofold study, which examined the same notion of the use of social media for neuromarketing—from the viewpoints of both companies and consumers to find connections and determine how they could be put into practice?

Given that this method of analysis (combining the outcomes of two distinct studies on the research on the use of neuromarketing in social media) was not used in other papers, we began on our research plan inspired mainly by two models i.e., information - based perception model and technology acceptance model. Therefore, the results of these two descriptive studies—one from the standpoint of the organization, the other from that of the user—regarding perceptions of employing uses of neuromarketing in online forums are corroborated in the current paper. These two studies were created in tandem, mirroring one another, giving us a clear picture of how well the objectives of the business align with the advantages of employing neuromarketing tools to collect and exploit user data from social networks.

3.2. Considerations and Conditions

Being a social media user was the initial requirement for both types of candidates. The market's knowledge with these notions will determine how the application of neuromarketing in online social networks is received. When examining how firms and individuals are responding to new trends like neuromarketing, it was crucial to consider the fact that the research was conducted on the Pakistani market, a developing nation with a more recent business culture than the US or Western Europe.

There is currently little to no work focused on this precise analysis; instead, there are a few isolated studies on various subject areas or consumer groups that are being conducted and that too in other regions of the world, such as the adoption of smartphones by teenagers (Alt & Seer, 2012), the acceptance of technology (specifically, the acceptance of Facebook) by Romanian university students (Balog & Pribeanu, 2016). Due to this knowledge gap, we decided to examine these two concepts independently before discussing how neuromarketing is used in social media. Our goals were to first comprehend the role of social media in the lives of organizations and individuals, and then to comprehend how neuromarketing is perceived generally.

The following three study objectives were developed because of the research designing procedure, as shown in Table below:

Table 4: Research Goals

Research Goals for the Organizations Survey	Research Goals for the Social Media User Survey
a. Social media usage for business objectives (what platforms, with what purpose)	a. Social media usage for personal reasons (what platforms, with what purpose)
b. The degree to which the notion of neuromarketing is understood by the businesses.	b. The degree to which the notion of neuromarketing is understood by the individuals.
c. The purpose of potential uses of these neuromarketing applications in social media channels.	c. The advantages that might be attained in the social media channels using neuromarketing techniques.

3.2.1. Propositions

Our study's first proposition was that social media was utilized by businesses to communicate about their goods and services in a more personalized fashion and that it served as a source of information and entertainment for individuals. The second proposition around the use of neuromarketing in social media was that businesses were seizing these opportunities while consumers were more reluctant because of privacy concerns.

3.3. Data collection and processing

3.3.1. Sampling design

This is an interpretivist study conducted to understand & explore neuromarketing in the context of social media in Pakistan. It is qualitative research as the purpose is to develop understanding and to explore the perception, familiarity and attitude. It is primary research and the research instrument for data collection will be in-depth interviews through an open-ended questionnaire. Non-probability and purposive sampling techniques will be used to conduct this research. As a research

method, we conducted in-depth interviews with businesses' representatives (preferably marketing managers), as well as a focus group with social media users online and on-site. Being exploratory research, we kept the sample size and structure for a statistically valid study of this market. Thus, interviewing as minimum as 12 representatives from the organizations and 12 individual users. The four most common neuromarketing techniques—eye tracking, face coding, voice recognition, and EEG—each have their own section in this study (Harrell, 2019).

A set of factors, including capital form, area of activity (using the classification of Individual Consumption According to Purpose - COICOP), number of employees (under 9, 10-49, 50-249, 250 and more), and turnover, were used to determine the sampling structure for the survey with organizations. For the survey of specific users, we divided the sample into age brackets (18 to 30 years), gender (male and female), and education level (secondary, higher).

3.3.2. Plan of action

1. The questionnaire needs to be finalized.
2. Questionnaire validity by domain & research experts.
3. Validated questionnaire to be discussed.
4. Scheduling interviews.
5. In-depth interviews conducted.

3.3.3. Plan of analysis

After the interviews are conducted the next step will be transcribing the collected textual data. Then nodes & frequencies of words using NVIVO, and finally thematic content analysis will be done.

3.3.4. Instruments used to collect and analyze data.

The interview questions were conducted through an open-ended questionnaire built on Google forms, which was shared with the help of a link prior to the scheduled interview to the interviewee. The data was collected in the spring of 2023. The software used for analyzing data was NVIVO and MS Excel.

3.3.5. Research schedule

Year	2022 to 2023											
Months	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct
Research planning												
Literature Review												
Data Acquisition												
Data analysis												
Report Writing												
Project Submission												
Project Presentation												

Chapter 4: Discussion and Analysis

4.1. Chapter Overview

As the results and findings of the study are specifically intended to be contrasted, the research findings for each objective will be presented in correlation in this part for both organizations and individual users. This will allow us to demonstrate which of the company's efforts were truly in line with the needs of the market.

4.2. Qualitative In-depth Interviews Results

Below are the results of our findings displayed in terms of tables and charts with further descriptions. This report consists of Individual sections for the use of social media, grade of understanding with the neuromarketing concepts, and the degree of utility for each of the four most popular neuromarketing techniques in social media along with their purposes and benefits.

4.2.1. Social media usage

This must be viewed from both the perspectives i.e., professional perspective of organizations and individual perspective from a social media point of view. To ensure that the organizations have a sustainable plan for their business models and online campaigns, these two perspectives must also connect when put into practice. Depending on the social media platform, using social media can have a variety of underlying motivations. Therefore, it is crucial to determine which platforms are used by businesses and individuals as well as the associated activities they carry out on it. As can be seen in Table 5, both firms and personalities are maximum frequently found on LinkedIn, remain it for professional or private motives followed by Facebook. It has been found that all the individuals who are being interviewed show their complete presence on LinkedIn, Facebook, Instagram, and YouTube. However, organizations on the other hand, all are using LinkedIn only while most of them are using Facebook, Instagram, and YouTube but not all. Twitter is being found to be the least used social media platform by both organizations and individuals.

Social Media usage by Organizations	%	Social Media usage by Individuals	%
LinkedIn	100.0	LinkedIn	100.0
Facebook	87.5	Facebook	100.0
Instagram	87.5	Instagram	100.0
YouTube	87.5	YouTube	100.0
Twitter	50.0	Twitter	57.1

The alignment of organizational goals with customer needs serves as the cornerstone of a successful communication approach. Additionally, this entails going to where your customer is and speaking or acting in their best interests. Understanding why people use social media platforms provides businesses the chance to familiarize and encounter their customer's central. As shown in the tables below, businesses frequently fail to analyze the trends for each platform and instead opt to build an overall message strategy for several social media platforms out of convenience. For instance, Facebook is used by individuals to communicate with others or for entertainment, while businesses advertise their goods and services there. However, there is some match that can be found in Instagram usage purposes as individuals use it to follow people and organizations of their interests whereas, organizations are also largely present on Instagram to communicate with the clients and audience. Moreover, LinkedIn, which is used for hiring, business partnerships, and job postings, is the platform that is most in line with organizational and individual purposes.

Table 6: Purpose of using social media platforms by individuals.

Purposes	Facebook	Instagram	Twitter	LinkedIn	YouTube
For Professional Purposes	0.0	0.0	0.0	42.8	14.2
Finding a Job	0.0	0.0	0.0	57.1	0.0
Sharing opinions with others, through personal posts or comments on others' posts	0.0	14.2	0.0	28.5	0.0
Communicating with other social media users (messenger)	28.5	28.5	0.0	0.0	0.0
To keep up with what is happening in the world	0.0	14.2	71.4	28.5	28.5
For entertainment	71.4	14.2	0.0	0.0	71.4
To know what my friends/acquaintances are doing	42.8	57.1	0.0	14.2	0.0
To follow people and organizations of interest to me	57.1	57.1	0.0	14.2	14.2
To post photos/videos of moments in my life	14.2	14.2	0.0	0.0	14.2

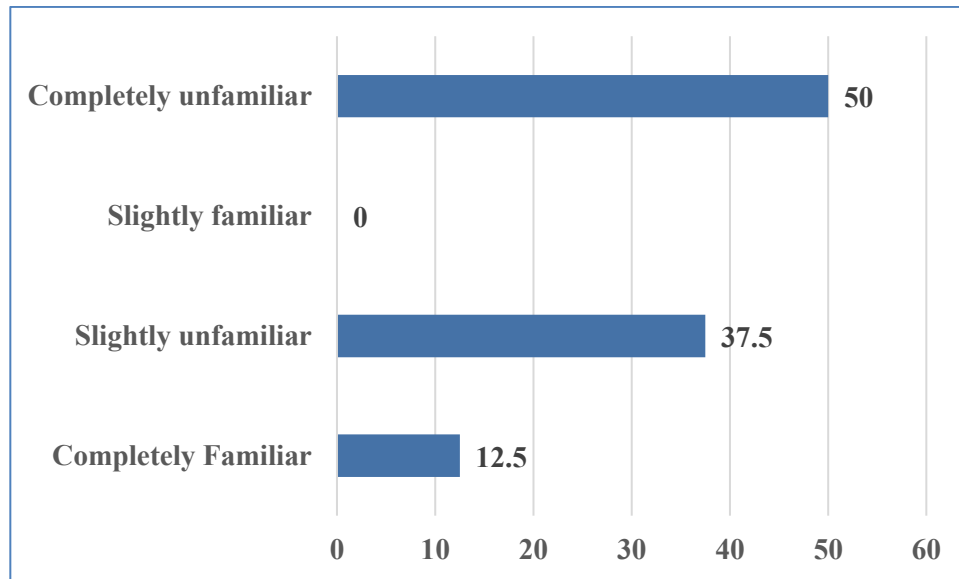
Table 7: Purpose of using social media platforms by organizations.

Purposes	Facebook	Instagram	Twitter	LinkedIn	YouTube
Recruitment	0.0	0.0	0.0	62.5	0.0
Finding business partners	0.0	0.0	0.0	87.5	0.0
Products and Services promotion	87.5	100.0	12.5	62.5	75.0
Communicating with clients and audience	75.0	62.5	25.0	25.0	62.5
General public information	75.0	50.0	0.0	12.5	75.0

4.2.2. The Level of Knowledge of the Neuromarketing concepts

The analysis of neuromarketing utility must be considered in the context of how well-known the notion is among both organizations and people. People dread change and the unknown, according to the evidence (Cao, Han, Zhang, & Hirshleifer, 2007). Therefore, asking businesses to capitalize in and individuals to engage in neuromarketing studies deprived of first taking a concrete idea of their degree of expertise on the issue is too speculative to be meaningful. As can be seen in Graph 4, there is attentiveness in two parts when it derives to firms' awareness with neuromarketing:

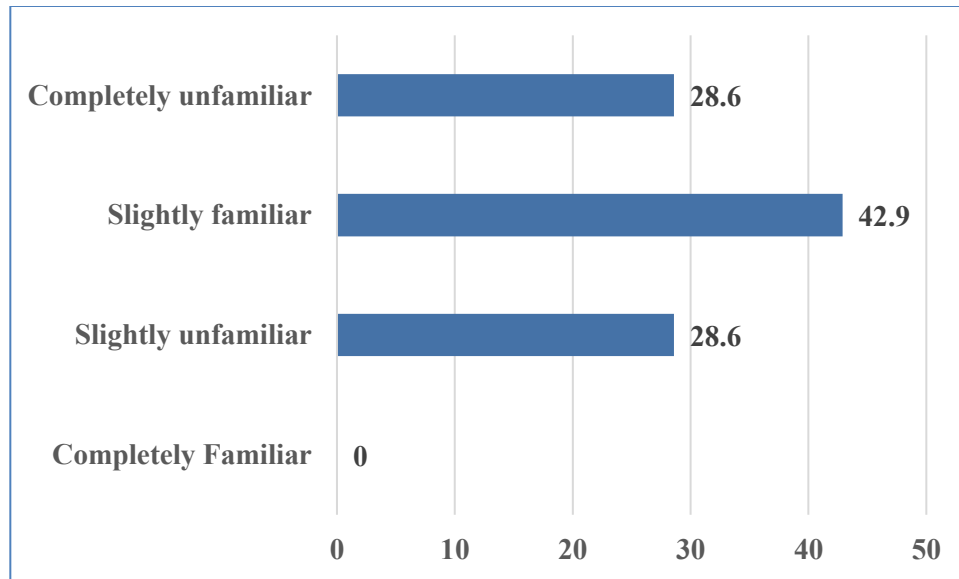
Persons who are completely unfamiliar with this concept, and those who are slightly unfamiliar with the concept. It is also found that on average, only 25% of the companies are familiar with the concept of neuromarketing, which is a very low degree of familiarity.



Graph 4: Degree of familiarity of organizations to neuromarketing concept (%)

This certainly created a need for more thorough discussion of neuromarketing with the business environment so that they could comprehend both the method of information analysis and its value. The mental associations that research participants used to influence or manipulate the customer also reinforced this desire. There was, of course, a subset of organizations that had some accurate perceptions of neuromarketing e.g., identifying responses to stimuli, doing objective studies of consumer behavior, examining consumers' brain waves etc., and we may build on this when attempting to increase awareness.

Graph 5 demonstrates that the study on individual users revealed that most of the answers were concentrated to be slightly familiar with the concept of neuromarketing. These findings demonstrate that the market is not uniform in its understanding of the actual concept of neuromarketing, viewing just some aspects of it.

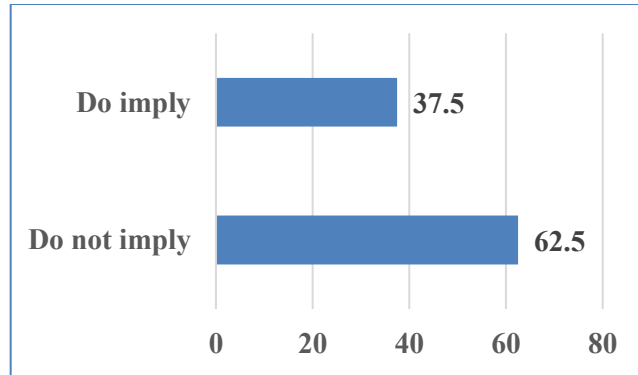


Graph 5: Degree of familiarity of individuals to neuromarketing concept (%)

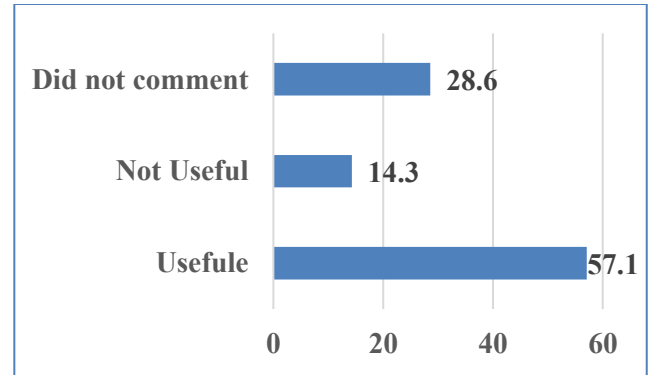
4.2.3. The usefulness of each social media neuromarketing application. Benefits and Objectives

Under this heading, the results of our main and core objective are demonstrated and discussed i.e., “To understand neuromarketing and the vital use of it.” In this part we will analyze whether they would use neuromarketing in social networks and why? However, the “why” response must be seen from two distinct perspectives, namely the organization’s business goals and the advantages that users stand to gain. To ensure that all respondents have a thorough understanding of the concept they are reviewing, we have inserted a brief description for each of the four neuromarketing applications tested as part of our research before asking any questions about them. We analyzed the answers to our questions in two sections under this heading. First, we found out the current utilization status in organizations and importance to the individuals of all four neuromarketing techniques. Then, we analyzed the answers to the “why” question – the purposes and the benefits or organization and individual, respectively by analyzing spontaneous responses; we can gain insights into how businesses and individuals articulate the reasons behind the potential benefits of neuromarketing in social networks. This perspective, previously unexplored in any website or report, allows us to understand the way expressions of reasoning unfold.

For *Eye Tracking*, most of the companies were found not to be using this technique in their organizations. Whereas, on the contrary, most of the individuals found this technique to be of importance and usefulness to them.



Graph 6: Eye Tracking as a tool for Organizations' utilization (%)



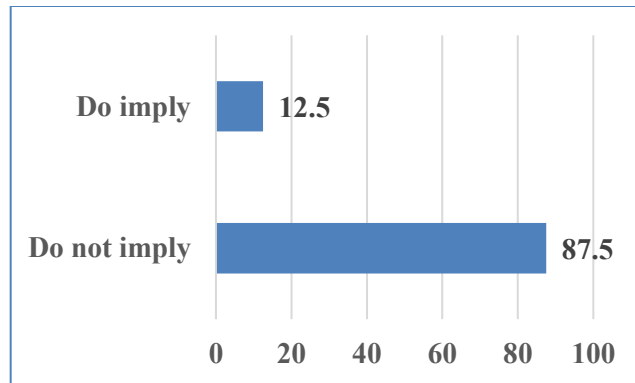
Graph 7: Eye Tracking for Individuals (%)

One of the primary motivations for companies to employ eye tracking in social networks is to identify consumer attention patterns, enabling them to optimize and restructure their content. This aligns with the key advantage that consumers seek when granting permission for eye tracking usage - the ability to discover their areas of interest, a perspective not previously explored in any website or report.

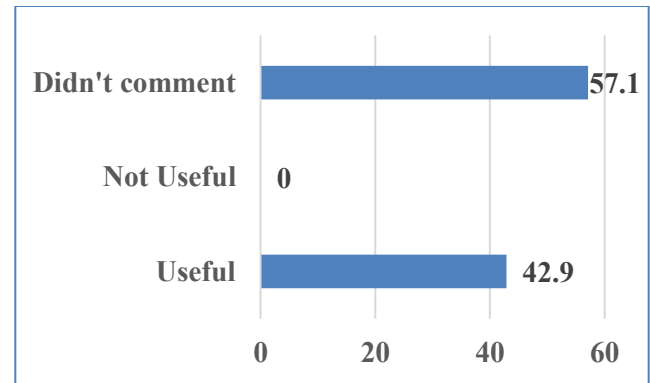
Table 8: Purpose to use Eye Tracking

Purposes for which Organizations would use Eye Tracking in social media networks	%	Purposes for which Individuals would allow the use of Eye Tracking in social media networks	%
Find out the area of interest, the elements that draw attention	25.0	Find out my interest areas	57.1
Analysis of consumer behavior	25.0	It is helpful for companies, not users	14.2
Improving the promotion activity	12.5	Visual rearrangement of a page to make the items of interest more visible	14.2
Rearrange/streamline content	37.5	Shaping the user/consumer profile	28.5
		Content efficiency	14.2
		To show in the future only what is of interest for the user	28.5

On the other hand, for *Face Coding*, most of the companies do not imply this technique in their organizations. Whereas most of the individuals found it better not to comment on the importance or usefulness of this tool.



Graph 8: Face Coding as a tool for Organizations' utilization (%)



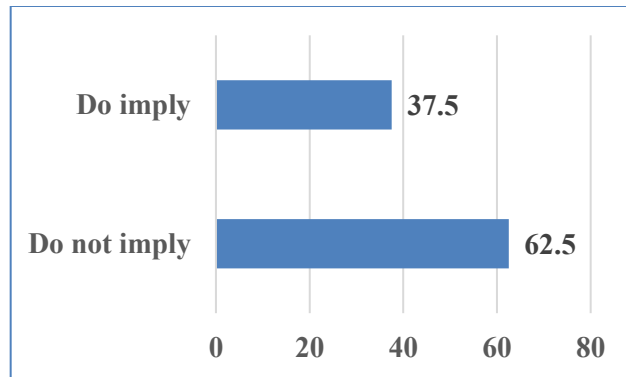
Graph 9: Face Coding for Individuals (%)

Most of the individuals were found to allow the use of face coding in social media to understand their preferences and desires. Whereas the subsequent benefit was also to be corresponding by the organizations to the most mentioned purpose for which they will use this technique to analyze consumer behavior and preferences.

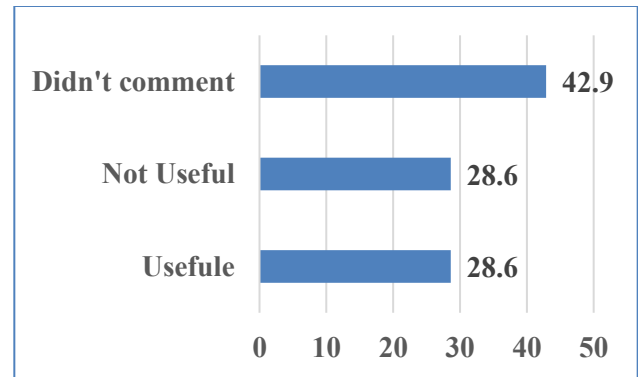
Table 9: Purpose to use Face Coding

Purposes for which Organizations would use Face Coding in social media networks	%	Benefits for which Individuals would allow the use of Face Coding in social media networks	%
Determining reactions to the posted content	12.5	Determining the impact of social media elements on users	14.2
Improving the promotion activity	12.5	Understanding consumer desires/preferences	42.8
Measuring users' emotions to posts	12.5	Discovering the true reaction, the one that could be masked by words	28.5
Analysis of consumer behavior and preferences	12.5	Selected content displayed based on user preferences	14.2
		Outline a user/consumer profile	28.5

The *Voice Recognition* technique was also seen to be less implied by the organizations and interestingly, the same pattern was observed by most of the individuals of not commenting on the importance or usefulness of the technique.



Graph 10: Voice Recognition as a tool for Organizations' utilization (%)



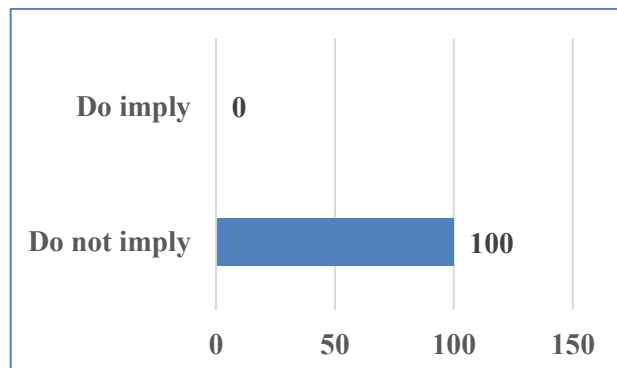
Graph 11: Voice Recognition for Individuals (%)

When asked about the reasons they would use it, companies said to use it for user identification and enhancing security as the main purposes. The reason which found a correspondence in the most outlined benefit perceived by individuals users - to outline a user or consumer profile and maintaining their privacy.

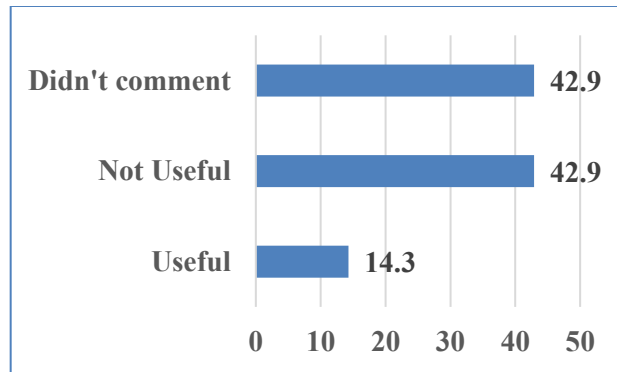
Table 10: Purpose to use Voice Recognition

Purposes for which Organization would use Voice Recognition in social media networks	%	Benefits for which Individuals would allow the use of Voice Recognition in social media networks	%
To create good content for ads	12.5	Outline a user/consumer profile and maintaining their privacy	28.5
In direct discussions with customers	12.5	Understanding consumer desires/preferences	28.5
Analysis of consumer behavior	12.5	Choosing the right tone	14.2
User identification and enhancing security	25.0	It is helpful for companies, not users	28.5

EEG (Electroencephalography), from a user's standpoint was the least helpful and unwanted of all neuromarketing strategies. From the business point of view, not even a single company uses this technique in their organization. On the other hand, most of the individual users also either found it not useful or didn't comment on its importance or usefulness.



Graph 12: EEG as a tool for Organizations' utilization (%)



Graph 13: EEG for Individuals (%)

Surprisingly, the organizations didn't comment on the anticipated use of this technique. However, most of the individuals found it to be of no benefit to them as they sense it to be most likely a breach of their privacy or risk.

Table 11: Purpose to use EEG.

Purposes for which Organizations would use EEG in social media networks	%	Benefits for which individuals would allow the use of EEG in social media networks	%
Did not comment / answer	100.0	Identifying the reaction to stimuli, their impact	14.2
		Determining the true reaction, even if it is not described	14.2
		Not useful, it will most likely breach privacy or is risky	42.8

4.3. Integrating Neuromarketing in social media

4.3.1. Mind maps and the alignment of purposes & benefits of organizations and individuals, respectively.

Under this heading, we integrated the findings of neuromarketing – the answer to the “why” questions by bringing the two artists of any industry person to person i.e., buyers and the business environment with the idea that if they work together, a company's actions will be mirrored in the advantages its customers experience, allowing the business model to remain sustainable. We will restrict our analysis of the business model to only one component because it is the subject of our research—the use of neuromarketing in social media in communication operations.

We took assistance from NVIVO to establish mind maps and understand which purpose stated by the organization really corresponds to the benefits perceived by the individuals.

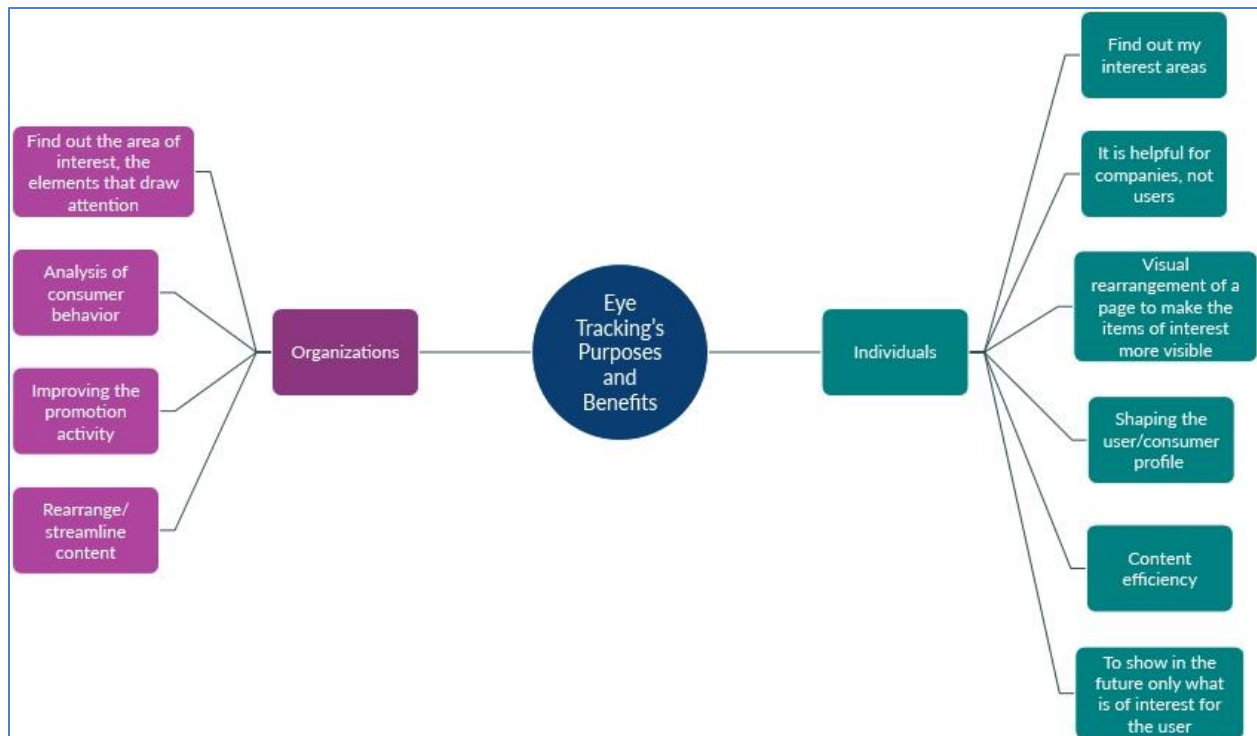


Figure 3: Eye tracking's purpose and benefits for both organizations and Individuals

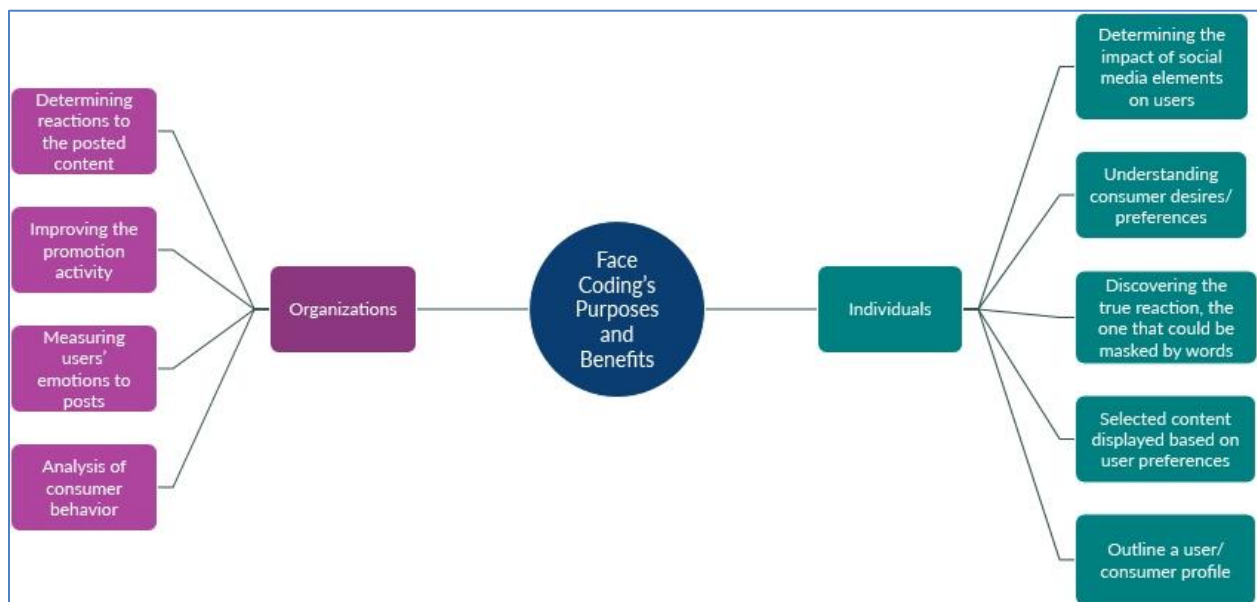


Figure 4: Face Coding's purpose and benefits for both organizations and Individuals

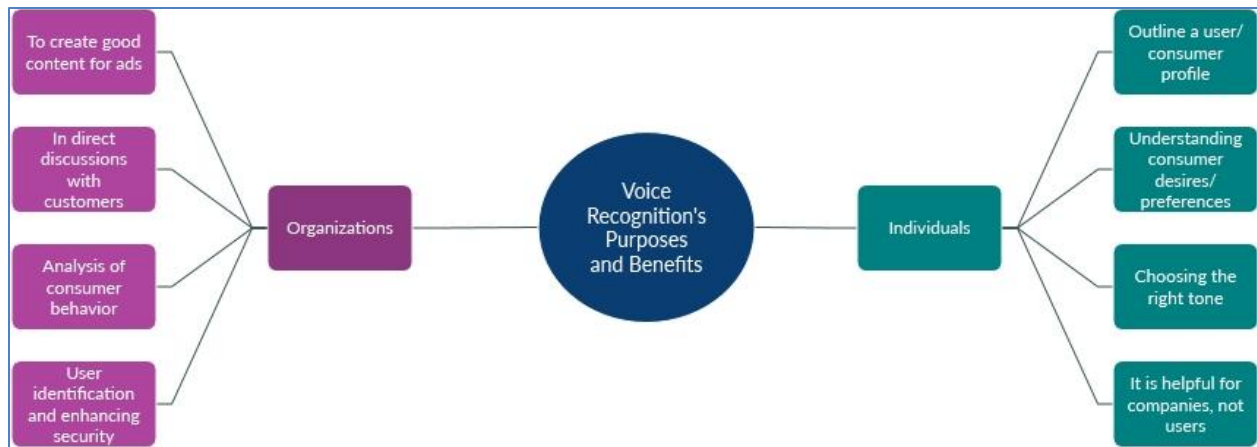


Figure 5: Voice Recognition's purpose and benefits for both organizations and Individuals

With the help of these mind maps we were able to clearly see the connection between different reasons stated by the organizations and the benefits perceived by individuals. The mind map of EEG was not established due to the lack of information from both sides, particularly from the business environment.

With the help of these mind maps, we have built a sustainable communication model. The reason behind building this model is that even if some of the neuromarketing applications now have a less implications or of usefulness, but their level of receiving can grow if firms approve to a sustainable communication model, in which their promotion purposes are in line with the predictable advantage of the consumer increasing their level of acceptance. The model we have built, therefore, aims to enhance social media relationships as well as preserve what is now effective.

4.3.2. Purpose versus Benefit Model

This "purpose versus benefit" model was created using the impulsive responses provided by businesses and people, but also because we have only included those responses that match to the opposite party.

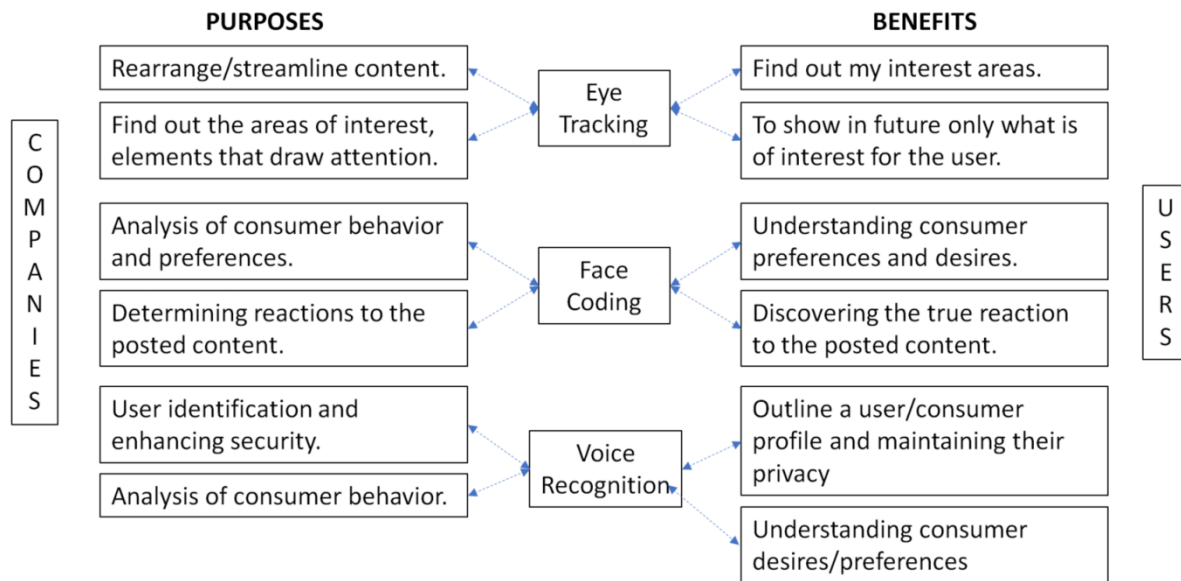


Figure 6: **Purpose versus benefit model**

We were not able to align the purpose and benefit of EEG as the information was very insufficient. The most crucial step in this purpose-benefit alignment process is communication, which requires businesses to frame their goals in terms of how they will benefit consumers. Because each business objective corresponds to a benefit in the users' part, our model is valuable in that it enables businesses to communicate with their customers in their own language creating sustainability.

Along with the parts that match our model, there are other company objectives or anticipated benefits for customers that do not match. Perhaps the importance of effectively communicating the benefits of neuromarketing techniques to users has been largely overlooked in previous publications and websites, highlighting the need for increased attention in this area.

Chapter 5: Conclusion and Recommendations

5.1. Chapter overview

This chapter serves as a valuable synthesis of the project's findings and offers actionable insights for future research and practical implementation in the field of neuromarketing using social media. The project investigating neuromarketing in social media has yielded valuable insights into its influence on consumer behavior and engagement.

These insights have practical implications for marketing strategies, emphasizing the importance of content optimization and personalized user experiences. Future research should address limitations and prioritize ethical considerations to ensure a positive user experience. Overall, this project serves as a foundational steppingstone for further advancements in the field of neuromarketing in social media.

5.2. Practical Implications

The connection between a company's objectives and the expected benefits for users in every neuromarketing strategy is a significant theoretical contribution of this model. The communication model is built on ethically obtained and processed data, aiming to provide users with a valuable experience that goes beyond just information and conversion. It promotes a sustainable mindset where organizational goals are pursued without compromising the well-being of users.

In the future, when evaluating specific markets, the empirical implications of this conceptual model can be acknowledged through validity testing. To ensure the necessary data is collected with consent, an important practical implication of this model is determining how to enhance user acceptance. Without user acceptance, neuromarketing efforts are futile. By showcasing genuine efforts and demonstrating tangible benefits, businesses can make social media platforms more adaptable, responsive, and less intrusive in users' lives.

5.3. Recommendations

Integrating neuromarketing into social media is a complex process that requires careful consideration of two major factors.

Firstly, organizations planning to explore neuromarketing research in the future should invest in minimally invasive devices capable of capturing subtle customer behavior nuances. This entails finding a delicate balance in designing research projects, utilizing readily available web cameras, microphones on various devices like laptops, computers, tablets, and smartphones. However, it is important to note that using such instruments may result in data of slightly lower quality.

Secondly, businesses need to address users' hesitancy in granting permission to collect information about their traits and behaviors. This is where the concept of sustainability comes into play, urging companies to be highly transparent about their business models and develop their products, services, advertising campaigns, and more in alignment with customer needs. In fact, there is potential for collaborative development with customers to ensure their needs are genuinely met.

5.4. Future research directions

Given that the info offered in this work is about proclaimed thoughts, both for organizations and personalities, upcoming study methods must go a stage additional and check the usage of neuromarketing applications in actual market circumstances. Future studies must determine the most appropriate gadgets to employ in the business environment to convey and collect the most relevant data. The research must concentrate on how users are adjusting to taking neuromarketing in their lives and determine whether this interruption is altering their behavior. Once this data has been verified, businesses should check their digital communication tactics and determine how to create a viable business model using this method.

5.5. Limitations

The limitations of the research and how they could affect future initiatives in this direction, the graphic nature of our study, with no connections among the dual main sorts of our model—the firm's objectives and user benefits—is the most significant limitation. This restriction seems to be brought about by the circumstance that this exploration is the combined output of dual different investigations (single on firms and single on customers), which is restricting our ability to establish correlation coefficients between them. Being descriptive study, we started with this limitation in mind and worked to gather as much data as we could for potential causal research.

5.6. Conclusion

By bringing to light the actual reactions, neuromarketing enables businesses to see through the cloud of large data and the cloak of socially acceptable responses. As a result, the effort will be well worth it in the end. However, since this is a collaborative activity (businesses need consumer assistance in data collecting), the communication strategy must put a strong emphasis on demonstrating to customers the benefits that they stand to gain. The purpose/benefit model, therefore, is used to integrate neuromarketing in social media for this reason. However, the environment should not be viewed as an everlasting roadblock to the application of neuromarketing in social media, but somewhat as a stage that must remain passed in command to truly forge a lasting bond with clients.

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